

Patent Claims:

1. Electromagnetic valve, in particular for wheel slip control systems of motor vehicles, including a valve housing in which a valve closure member is movably guided, a magnet armature that performs a stroke movement in the direction of a magnet core arranged in the valve housing for the proportional actuation of the valve closure member in response to the electromagnetic energization of a valve coil fitted to the valve housing, and a spring positioning the magnet armature at a defined axial distance from the magnet core in the electromagnetically non-energized valve position so that the magnet armature is isolated from the magnet core by a space,
c h a r a c t e r i z e d in that the valve coil (13) can be actuated by an electric current in such a manner that the valve closure member (9), beyond the proportional actuation, impinges upon the valve seat (2) with a defined impulse force.
2. Electromagnetic valve as claimed in claim 1,
c h a r a c t e r i z e d in that the power of the electric current is rated so that the valve closure member (9) performs its maximum stroke for impinging upon the valve seat (2).
3. Electromagnetic valve as claimed in claim 1 or 2,
c h a r a c t e r i z e d in that for removing contaminants deposited at the valve seat (2) and/or at the valve closure member (9), the power of the electric current is variably adjustable in response to the degree of contamination.

4. Electromagnetic valve as claimed in claim 1,
c h a r a c t e r i z e d in that in time intervals when
proportional valve actuation does not take place, a
current is applied to the valve coil (13), said current
making the valve closure member (9) impinge with a defined
impulse force continuously or discontinuously upon the
valve seat (2) in order to remove sediments from the valve
seat (2) and/or the valve closure member (9).
5. Electromagnetic valve as claimed in claim 1,
c h a r a c t e r i z e d in that in time intervals when
the fluid pressure at the valve closure member (9) is at a
minimum, a current is applied to the valve coil (13) which
makes the valve closure member (9) impinge with the
maximum stroke and the maximum speed upon the valve seat
(2) until the sediments sticking to the valve seat (29)
and/or the valve closure member (9) are detached.
6. Electromagnetic valve as claimed in claim 5,
c h a r a c t e r i z e d in that for rinsing detached
sediments out of the area of the valve seat (2) and/or the
valve closure member (9) in times when the fluid pressure
is at a maximum, the valve closure member (9) has assumed
a position in which it releases the maximum opening cross-
section of the valve.
7. Electromagnetic valve as claimed in claim 1,
c h a r a c t e r i z e d in that depending on a valve
leakage that occurs in the valve's closed position, the
valve coil (13) is actuated by means of an impulse force
detaching the sediments at the valve seat (2) and/or at
the valve closure member (9).

8. Electromagnetic valve as claimed in claim 7,
c h a r a c t e r i z e d in that for detecting the valve leakage between the valve seat (2) and the valve closure member (9), a means is provided measuring in the closed valve position the pressure of the fluid upstream and downstream of the valve closure member (9).
9. Electromagnetic valve as claimed in claim 8,
c h a r a c t e r i z e d in that for detecting the pressure, in particular a pressure change representative of the valve leakage, pressure sensors (6) are arranged upstream and downstream of the valve closure member (9), said sensors being connected to an electronic controller (20) for the purpose of evaluating the pressure sensor signals representative of the pressure variation at the valve closure member (9), said controller actuating the valve coil (13) and including an evaluating circuit.
10. Electromagnetic valve as claimed in claim 9,
c h a r a c t e r i z e d in that for representing the hydraulic pressure change prevailing at the valve closure member (9) in the closed valve position, a performance characteristics for a pressure model is stored in the electronic controller (20), comprising the pressure difference compared to the nominal pressure that is necessary for an inadmissible pressure change.